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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/642,629	08/19/2003	Michael P. Dallmeyer	051252-5254	3777

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SIEMENS CORPORATION
INTELLECTUAL PROPERTY DEPARTMENT
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EXAMINER

GORMAN, DARREN W

ART UNIT	PAPER NUMBER
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3752

DATE MAILED: 11/17/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No. 10/642,629	Applicant(s) DALLMEYER ET AL.	
	Examiner Darren W. Gorman	Art Unit 3752	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 November 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) 16-21 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of Invention Group I in the reply filed on November 3, 2005 is acknowledged.
2. Claims 16-21 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected Invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on November 3, 2005.

Specification

3. The disclosure is objected to because of numerous informalities. The following listed informalities are merely examples and are not to be construed as an exhaustive list of all such occurrences. Applicant's assistance is respectfully requested for reviewing the specification entirely to locate and correct all informalities.

- Throughout pages 3-6, reference number "112A" is used to designate the both the "armature" and the "closure member". In the instances where "112A" designates the "closure member", the reference number should be changed to "112B".
- On page 3, in paragraph [0014], line 1, "120" should be changed to "108".
- On page 3, in paragraph [0014], lines 1 and 2, "122" should be changed to "108A".
- On page 3, in paragraph [0014], line 3, it is noted that reference number "118A" is not found in the drawings.

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- On page 3, in paragraph [0016], line 4, “110” and “112” should be changed to “102” and “104”, respectively.
- On page 4, in paragraph [0017], line 4, “130” should be changed to “120”.
- On page 4, in paragraph [0019], lines 1 and 3, “130” should be changed to “120”.
- Further, on page 6, the disclosure in paragraph [0026] is confusing because the paragraph states that “O-ring 134” seals the inlet end of the fuel injector tube to the fuel supply. When viewed in the drawings, “O-ring 134” is located at the opposite end of the fuel injector from the fuel supply.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

5. Claims 1-15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

- Regarding claim 1, on lines 10-11, the recitation, “the orifice plate” lacks antecedent basis. What element of the disclosed fuel injector is the orifice plate?
- Regarding claim 5, on line 1, the recitation, “the at least one weld” lacks antecedent basis.

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- Regarding claim 6, on line 2, the recitation, “a second end being coupled to a body” is unclear. Is this the same “body” as recited in claim 1 or a different body now being recited? If it is the same “body” as recited in claim 1, then the specification may not have proper support for the claim since the downstream end of “inlet tube 102”, as shown in Figure 1 is clearly not coupled to “body 120”. If this “body” being recited in claim 6 is a different body, what particular element of the disclosed fuel injector is this referring to?
- Further regarding claim 6, the recitation, “the armature” lacks clear antecedent basis. An “armature assembly” has been recited in claim 1, however the “armature assembly is not further limited to comprising “an armature” until claim 7.
- Regarding claim 10, the recitation, “first and second spaced apart generally planar surfaces disposed about the longitudinal axis, the first and second spaced apart generally planar surfaces; and...” is unclear. The claim reads awkwardly as if there is a limitation that is missing between “surfaces” and “; and”.
- Regarding claim 11, the entire claim is unclear. In claim 1, the “securement portion” was defined as the portion of the seat assembly that extends along the longitudinal axis away from the orifice disk, thus defining the “second length”. Now claim 11 is reciting that the “securement portion” cinctures the flow portion over a third length being greater than the second length. Note: As understood by the Examiner, and in view of Applicant’s specification, the “third length” is the combined length of both the flow portion length (i.e. “first length”) and the

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securement portion length (i.e. “second length”) – see Applicant’s specification page 5, paragraph [0022], lines 4-8.

- Regarding claim 12, on line 2, the recitation, “the first perimeter end of the seat” is unclear. Is this the same “first perimeter end” of the “securement portion” as recited in claim 11?
- Regarding claim 13, on line 1, the recitation, “an orifice disk” is unclear. Is this the same “orifice disk” as recited in claim 1 or a different disk now being recited?
- Further regarding claim 13, on line 2, the recitation, “the second surface of the seat” lacks antecedent basis. Is this the same surface as the “orifice disk retention surface” as recited in claim 1 or a different surface that is connected to a different orifice disk?

For the purpose of examination, the claims will be examined as best understood.

Double Patenting

6. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either

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is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

7. Claims 1-6 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-6 of copending Application No. 10/642,628. Although the conflicting claims are not identical, they are not patentably distinct from each other because all of the essential recited structural limitations of claims 1-6 of the instant application are recited in claims 1-6 of the co-pending application, the only differences being that the instant claims 1-6 recite a “housing”, whereas the co-pending claims recite a “tube assembly”. Note however, that the “tube assembly” of the co-pending claims includes the same recited structure and performs the same function as the “housing” of the instant application claims.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 1-5 are rejected under 35 U.S.C. 102(b) as being anticipated by Haltiner, Jr. et al., USPN 6,390,067.

Haltiner et al. shows several embodiments of a fuel injector (see Figures 1-4)

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comprising: a housing having a passageway extending between an inlet and an outlet, the housing including a body (12), wherein a portion of the body is located proximate the outlet; an armature assembly (32) disposed in the body, the armature assembly having a closure member (16); and a seat assembly (18) disposed in the body, the seat assembly of the embodiments including: a flow portion, the flow portion extending along a longitudinal axis (13) between a first surface and an orifice disk retention surface at a first length (Note: The “first surface” can broadly and reasonably read on any surface of the seat assembly, and hence the “first length” can reasonably be any length in the longitudinal direction within the seat assembly as long as it is defined on one end by the orifice disk retention surface), the flow portion having a seat orifice (54) extending therethrough; an orifice disk (66) coupled to the orifice disk retention surface; and a securement portion extending along the longitudinal axis away from the orifice disk retention surface at a second length, wherein the second length is greater than the first length. Note that the structure of the securement portion differs between the shown embodiments of Haltiner et al., wherein the first embodiment (Figures 1, 2A and 2B) shows crimping of the lower end of the injector body for securing the seat assembly, while the embodiments of Figures 3 and 4 include a weld (86, 99) extending from an outer surface of the body to the surface of the securement portion (84, 94) of the seat assembly at a location distal to the flow portion, wherein the weld appears to be located at a length approximately 50% of the second length along the longitudinal axis. It was further noted that Applicant recognizes equivalency in the art of several known “suitable attachment techniques” for fixedly attaching the valve seat member to the injector body of the invention, those techniques including laser welding, crimping, bonding, riveting,

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and friction welding or conventional welding” (see Applicant’s specification, page 5, paragraph [0022], lines 1-3; and paragraph [0023], lines 10-13)

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 6-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Haltiner et al., in view of Fly et al., USPN 6,572,028.

Haltiner et al. shows all of the recited limitations of claim 5, and further shows the fuel injector including an inlet tube (22) having a first end and a second end being coupled to the body, the second end of the inlet tube having an end portion confronting an end portion of the armature; a resilient member (42) having one portion disposed proximate the second end of the inlet tube and another portion disposed within a pocket in the armature; and an adjusting tube (44) located within the inlet tube, the adjusting tube engaging the one portion of the resilient member so as to bias the closure member towards a position occluding flow through the seat orifice. Still further, Haltiner et al. shows the armature assembly including an armature having an integral needle portion with a closure member (34) having an end being generally hemispheric about the longitudinal axis. Still further, Haltiner et al. shows the fuel injector wherein the inlet tube is a one-piece, pole piece member (see column 2, line 35). Still further, Haltiner et al. shows the flow portion comprising first and second spaced apart generally planar

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surfaces, and a sealing surface (56- as shown in Figure 1) co-terminus with one of the first and second surfaces and contiguous with the seat orifice. Still further, Haltiner et al. shows the seat assembly having a perimeter extending along the longitudinal axis defined by a first perimeter end and a second perimeter end and having a length that equals the combined length of the first and second lengths, therefore being greater than the second length. Still further, Haltiner et al. shows the embodiments of Figures 1 and 4 including a guide member (58 – as shown in Figure 1) contiguous to the first perimeter end, the guide member being provided with a central through opening along the longitudinal axis and a plurality of through openings disposed about the central opening, the central opening guiding the closure member along the longitudinal axis between a first position where the closure member occludes fuel flow through the seat orifice and a second position where the closure member is spaced from the seat orifice so as to permit fuel flow through the seat orifice. Still further, Haltiner et al. shows the orifice disk having a plurality of through openings being in communication with the seat orifice. Still further, Haltiner et al. shows the embodiments of Figures 3 and 4 wherein the armature comprises at least one opening generally oblique to the longitudinal axis and extending through the surface of the armature.

However, since the disclosure of Haltiner et al. is mainly concerned with the details of the valve arrangement, Haltiner et al. is silent as to many of the details in the upstream end of the fuel injector, such as “a filter being disposed proximate the first end of the inlet tube”, and only Figure 1 shows some of the details of the injector upstream from the valve arrangement. Further, Haltiner et al. shows the armature assembly as comprising a single piece, which forms the armature and needle portion carrying the

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closure member, rather than the armature being two separate pieces wherein an inner surface of the armature telescopes over an outer surface of a needle/closure member. It was noted that Applicant recognizes equivalency in the art of an armature assembly being either a one-piece member or two separate, but joined pieces (see Applicant's specification, page 3, paragraph [0013], lines 4-5), and therefore, Applicant recognizes that the formation of either a one piece or two-piece armature assembly is not critical to the proper functioning of Applicant's fuel injector.

Fly et al. shows a fuel injector having a fuel filter disposed proximate a first end of an inlet tube, for filtering out contaminants from the fuel entering the inlet tube, as is common and well known in the fuel injector art. Fly et al. also shows an armature assembly (14) comprising an armature having an inner surface that telescopes over an outer surface of a needle/closure member (16), as is common and well known in the fuel injector art.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to include a fuel filter, as shown by Fly et al., disposed proximate the first end of the inlet tube of Haltiner et al., in order to filter out contaminants from the fuel entering the inlet tube.

It further would have been obvious to one having ordinary skill in the art at the time the invention was made to form the armature assembly of Haltiner et al. from two telescoping pieces (an armature and needle/closure member), as taught by Fly et al., since the selection of either a one-piece or two-piece armature arrangement would be within the ordinary skill of one in the art, and one having ordinary skill would expect the fuel

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injector of Haltiner et al. to function equally well with either the shown one-piece armature assembly or the modified two-piece assembly example taught by Fly et al.

Conclusion

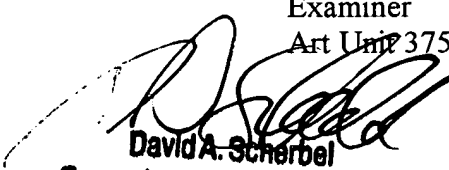
12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US Patents to Maier et al., Gesk et al., Landschoot et al., McCormick, Haltiner, Jr. et al., and Peterson, Jr., are cited as of interest.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Darren W. Gorman whose telephone number is 571-272-4901. The examiner can normally be reached on M-F 7:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dave Scherbel can be reached on 571-272-4919. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DWG 11/10/05
DWG
November 10, 2005

Darren W Gorman
Examiner
Art Unit 3752

David A. Scherbel
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